

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/014702 A1

- (51) International Patent Classification⁷: **C08J 7/18**
- (21) International Application Number:
PCT/EP2004/006362
- (22) International Filing Date: 12 June 2004 (12.06.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
03016889.2 24 July 2003 (24.07.2003) EP
- (71) Applicant (for all designated States except US): **PAUL SCHERRER INSTITUT** [—/CH]; CH-5232 Villingen PSI (CH).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BRACK, Hans-Peter** [CH/CH]; Schulhausstrasse 64, CH-8704 Herrliberg (CH). **PADESTE, Celestino** [CH/CH]; Bäderstrasse 25, CH-5400 Baden (CH). **SLASKI, Michal** [PL/CH]; Kirchweg 3a, CH-5235 Ruefenach (CH). **SOLAK, Harun** [TR/CH]; Sommerhaldenstrasse 5c, CH-5200 Brugg (CH).
- (74) Agent: **FISCHER, Michael**; c/o Siemens AG, Postfach 22 16 34, 80506 München (DE).
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR GRAFTING A CHEMICAL COMPOUND TO A SUPPORT SUBSTRATE

(57) Abstract: According to the present invention a method for grafting a chemical compound to a predetermined region of a support substrate (4) is disclosed, comprising: a) irradiating selectively the support substrate with electromagnetic radiation and/or particle radiation in order to both define said predetermined region and to form at least one reactive functional group or a precursor thereof in said predetermined region of the support substrate; b) exposing the irradiated support substrate to said chemical compound or to a precursor thereof. Therefore, only these very few steps are needed to effectively grafting the desired chemical compound, such as an organic compound, to the predetermined regions of the support substrate. Moreover, the irradiation step can be carried out in a vastly flexible manner and allows to generate numerous distinct shapes of the predetermined regions. Further, micro- or nano-scale regions in the support substrate capable of forming reactive functional groups or precursors thereof upon exposure to particle or electromagnetic irradiation can be easily achieved.